

ABSTRACT OF THE DISCLOSURE

A zero-voltage-switched, full-bridge, phase-shifted DC-DC converter for use in a DC power supply or battery charger includes a power transformer, four switching transistors connected to form a full bridge, and a decoupling capacitor and resonant inductor connected in series to the primary winding of the power transformer. At high loads, i.e., high output voltages, 5 the resonant inductor charges the stray and internal capacitance of the switching transistors. Under light loads or in a no-load condition, with the current through the resonant inductor insufficient to allow the inductor to recharge these capacitances, the combination of a second inductor connected at one end to the central tap of the power transformer's primary winding and at its second opposed end to the middle point of a capacitive voltage divider, permits the second 10 inductor to store enough energy to effectively recharge the stray and internal capacitance of the switching transistors for improved operating efficiency.